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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,237	07/29/2003	Francis J. DiSalvo JR.	C1134.70003US00	8278

7590 01/25/2006

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EXAMINER

LEWIS, BEN

ART UNIT PAPER NUMBER

1745

DATE MAILED: 01/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/630,237

Applicant(s)

DISALVO ET AL.

Examiner

Ben Lewis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-90 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-90 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-14, drawn to a catalyst designed for use in a catalytic system, classified in class 429, subclass 27.
  - II. Claims 15-48, 49-56, 57-62 and 86-90 drawn to a fuel cell, classified in class 429, subclass 12.
  - III. Claims, 63-71, 72-78 and 79-85, drawn to a method oxidizing hydrogen fuel to produce a current density per unit surface area of a cathode, classified in class 429, subclass 24

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because a fuel cell does not require the

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particulars of a catalyst to show novelty and unobviousness. The subcombination has separate utility such as a catalyst for treatment of exhaust gas from an automobile.

3. Inventions III and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case, as admitted in the subject matter of the present claims the electrical energy can be produced from three distinct methods as recited in claims 63-71, 72-78 and 79-85 respectively.

4. If invention II is elected, an election of species is required. This application contains claims directed to the following patentably distinct species of the claimed invention.

II-1, Claims 15-48, drawn to a fuel cell comprising

A first electrode that comprises an ordered intermetallic compound and a second electrode

II-2 Claim 49-56, drawn to a hydrogen fuel cell comprising

A first electrode

A second electrode

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Wherein the hydrogen fuel cell is capable of oxidizing hydrogen fuel comprising greater than about 0.01 mole percent carbon monoxide when operating for 30 minutes at conditions including a temperature of 80 degrees C or less with a maximum output power of at least about 20% the maximum output power when oxidizing hydrogen fuel comprising less than about 0.0001 mole percent carbon monoxide when operating for 30 minutes at the conditions.

II-3 Claim 57-62, drawn to a hydrogen fuel cell comprising

An anode

A cathode

Wherein the hydrogen fuel cell is capable of oxidizing hydrogen fuel comprising greater than about 0.01 mole percent carbon monoxide when operating for 30 minutes at conditions including a temperature of 80 degrees C or less to produce a current density per unit surface area of the cathode at least about 0.05 Amp/sq. cm.

II-4 Claim 86-90, drawn to a hydrogen fuel cell comprising

A first electrode

A second electrode

Wherein the hydrogen fuel cell is capable of oxidizing hydrogen fuel comprising greater than about 0.01 mole percent carbon monoxide including a temperature of 80 degrees C or less with a maximum output power after 30 minutes of

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operation of at least about 20% the maximum output power at the start of operation

5. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, none of the claims are generic.

6. If invention III is elected, an election of species is required. This application contains claims directed to the following patentably distinct species of the claimed invention.

III-1, Claims 27-61, read on a method comprising:

Oxidizing hydrogen fuel comprising greater than about 0.01 mole percent carbon monoxide in a fuel cell for 30 minutes at conditions including a temperature of 80 degrees C or less with a maximum power of at least 20% the maximum output power when oxidizing hydrogen fuel comprising less than about 0.0001 mole percent carbon monoxide in the fuel cell for 30 minutes at the conditions.

II-2 Claims 72-78, read on a method comprising:

Oxidizing hydrogen fuel comprising greater than about 0.01 mole percent carbon monoxide in a fuel cell for 30 minutes at conditions including a temperature of 80

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degrees C or less to produce a current density per unit surface area of the cathode of at least about 0.05 Amp/sq. cm.

7. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).
8. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).
9. Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

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10. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ben Lewis whose telephone number is 571-272-6481.

The examiner can normally be reached on 8:30am - 5:30pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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Ben Lewis

A handwritten signature in black ink, appearing to be 'Ben Lewis', with a long horizontal stroke extending to the right.

Patent Examiner  
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A handwritten signature in black ink, appearing to be 'Patrick Joseph Ryan', with a stylized, cursive-like form.

**PATRICK JOSEPH RYAN**  
**SUPERVISORY PATENT EXAMINER**